IV.A. – Proposed Evaluation Criteria for Transmission and Other Resource Alternatives

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Purpose for Developing Evaluation Criteria

- Provide standardized, transparent evaluation methodology
- Develop statewide resource policies
- Compare resource alternatives
  - DSM, renewables
  - Generation alternatives
  - Transmission alternatives

Process

- Survey stakeholders in CA market
- Develop list of suggested evaluation criteria
- Present info in CEC workshop
- Receive public input
- Recommend approximately 5 criteria to be used as framework to evaluate future resource portfolios and projects

Stakeholders Surveyed

- CPUC and CAISO
- Consumer groups
- Environmental groups
- Generators
- Investor-owned utilities
- Municipal utilities
- Renewable groups
- Transmission owners
- Attachment A

Current Minimum Requirements

- Reliability (NERC, WECC, CAISO, utility)
- Energy efficiency
- Demand response
- Renewable portfolio standards
- Resource adequacy
- Other

Resource Evaluation Categories

- Reliability
- Least-cost
- Risk
- Environmental
- Attachment B

Stakeholder Suggested Reliability Criteria

- Minimize unserved energy
  - Included in total costs
  - Often zero or minimal
  - Transmission forced outages excluded
- Minimize reliability payments
  - Included in total costs
  - May be considered “transfer payment” from societal perspective
- Minimize potential terrorist consequences (primarily subjective)

Stakeholder Suggested Least-Cost Criteria

- Traditional present value of costs or revenue requirements
  - Capital costs or revenue requirements
  - Different perspectives (geography, type of participant, “modified”)
  - All quantifiable costs (market simulation, other)
  - Inclusion of environmental costs (CO2, others?, values?)

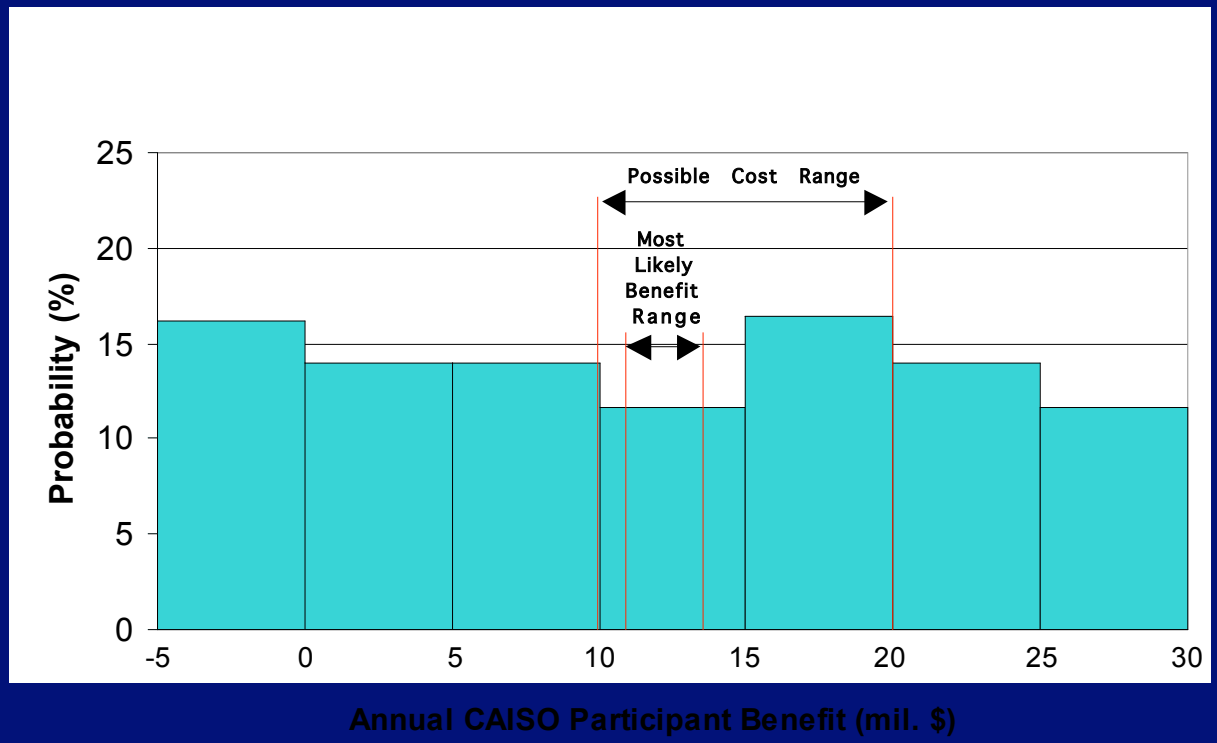
Stakeholder Suggested Least-Cost Criteria (cont.)

- Market valuation (static prices, less valuable for large portfolio)
- Market efficiency (market price / marginal cost)
- Seamless markets (imports and exports)
- Sustainable markets for generators
- Portfolio fit (less valuable for large portfolio)

Stakeholder Suggested Risk Criteria

- Qualitative comparison of portfolio histograms
- Difference between expected and “average worst-case” outcome
- Portfolio theory -- To Expiration Value At Risk (TEVAR) or similar VAR measurement
- Project, credit, counter-party, technology risk
- CO2 regulatory risk
- Resource diversity
- Resource flexibility
- CA self-sufficiency

Portfolio Histogram Example (Range of Benefits and Costs For Path 26 for 2013)



Stakeholder Suggested Environmental Criteria

- Environmental cost of airborne emissions (see least-cost)
- Renewables beyond RPS requirements
- Number of miles of new transmission right-of-way, visual and environmental impact
- Fossil-fuel dependency
- Once-through water cooling impacts and thermal pollution
- Environmental justice assessment

Possible Environmental Assessment

Proposed Evaluation Criteria Framework

- Reliability
- Least-Cost
- Risk
- Market Efficiency
- Fuel Diversity
- Resource Flexibility

Proposed Evaluation Criteria Framework (cont.)

Evaluation Criterion	Measurement Description	Criterion Derivation
Least-Cost	Compute present value of costs for appropriate perspective	Computed
Reliability	Summarize reliability improvements not required or quantified	Subjective
Risk	Determine difference between expected and average worse case	Computed
Market Efficiency	Compare market prices to competitive costs	Computed
Fuel Diversity	Summarize energy consumed by originating fuel source	Subjective
Resource Flexibility	Describe capital fund flexibility for resource commitments	Subjective

Conclusions

- Framework needs to be flexible
  - Type of project
  - Preliminary economics
  - Project scope
  - Resources available
- Other criteria might be included (or excluded) as appropriate
- All “reliability” projects have “economic” consequences which need to be considered

Questions or Other Suggestions?